

Date: Sun, 10 Oct 93 13:42:36 PDT
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V93 #1204
To: Info-Hams

Info-Hams Digest Sun, 10 Oct 93 Volume 93 : Issue 1204

Today's Topics:

Converting an HT
HF Mobile Antennas
idea for ground radials
MOTOROLA
Motorola ad in QST?
MultiBand Wire Antenna
ucts Announcement: BFH-1 & BFH-2
Temporary IDs (2 msgs)
RFI generating PC's to FCC (2 msgs)

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available (by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text herein consists of personal comments and does not represent the official policies or positions of any party. Your mileage may vary. So there.

Date: Sat, 9 Oct 1993 15:04:40 GMT
From: swrinde!gatech!wa4mei!ke4zv!gary@network.ucsd.edu
Subject: Converting an HT
To: info-hams@ucsd.edu

In article <9310082020.AA07548@opus.xyplex.com> sasminkey@xap.xyplex.com writes:
>Just a reminder that when you order crystals for a commercial radio converted
>to amateur bands, be sure to specify that you want amateur tolerance and
>not commercial tolerance crystals. This will save you a lot of money on the
>crystals! Reason: commercial tolerances are pretty tight to keep the radios
>very close to their assigned frequencies. We as amateurs are not constrained
>by any FCC regs in that area so amateur tolerance crystals are much cheaper
>to make.

On the other hand, if you're trying to hit a repeater, it'll be to your advantage to transmit on the frequency on which the repeater is listening. Most commercial equipment is used with repeaters, thus the tight tolerance. If you're also going to use a repeater, or a network of other fixed frequency stations, such as a packet LAN, then you want to be on the correct frequency too. Any old frequency will do if the intended target has a tunable receiver, but if not, go with the closer tolerance crystals.

"Amateur" tolerance crystals can be out by a kilohertz at VHF, or 5 or more kHz at UHF, and still meet spec. That will often **work** if you have a good signal margin, and the receiver on the other end has good AFC, but it's less than satisfactory as you tend toward the fringes, or when you try to hit a repeater. Repeaters normally do not use AFC because they have to work with a network of other stations and AFC can leave the receiver at one edge of the channel when the next user tries to bring up the machine from the other edge. Especially at UHF, you should also specify **temperature compensated** crystals. These are only available in commercial tolerance, but they are well worth the extra expense if your equipment will see temperature extremes.

Gary

--

Gary Coffman KE4ZV | "If 10% is good enough | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | for Jesus, it's good | uunet!rsiatl!ke4zv!gary
534 Shannon Way | enough for Uncle Sam." | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | -Ray Stevens |

Date: Sat, 9 Oct 1993 14:54:52 GMT
From: library.ucla.edu!europa.eng.gtefsd.com!gatech!wa4mei!ke4zv!
gary@network.ucsd.edu
Subject: HF Mobile Antennas
To: info-hams@ucsd.edu

In article <fred-mckenzie-071093171848@k4dii.ksc.nasa.gov> fred-mckenzie@ksc.nasa.gov (Fred McKenzie) writes:
>
>There is no doubt that a lower-loss resonator might make some improvement
>in the Hustler. I've heard comments to the effect that the 75 and 40 meter
>resonators actually get warm to the touch, after heavy use.

Warm? I've **melted** Hustler resonators. That was with a Galaxy V MkII running 400 watts PEP to a Hustler mounted on a 67 Chevy.

>However, I disagree that there could be a "much more efficient antenna
>design" of the same physical size, unless the lower mast were to be a
>longer portion of the total antenna length. Radiation occurs when current
>flows in a conductor. In the typical Hustler vertical whip configuration,

>the majority of the radiation occurs in the portion of the antenna between
>the feedpoint and the resonator, where the current is at its highest.
>
>For practical purposes, the resonator only serves to make the antenna match
>the feedline. Although some current does flow in the whip above the
>resonator, it is at best, the same amount of current that would flow in the
>same length at the top of a full quarter wave vertical. That top segment
>supplies a nearly insignificant percentage of the total amount of energy
>radiated.

This analysis is flawed. Yes the bulk of the radiation does occur from the mast below the coil, coils are lousy radiators, but the coil acts in lieu of the length of a quarterwave tower. At 75 meters, an unloaded tower would be 66 feet tall and the current would be distributed as a quarter sinusoid with the maximum at the base and the minimum at the tip. Now when the coil replaces most of this length, in this case 59/66ths of the length, most of the current still appears in the coil because a 1/4 wave radiator must have a quarter sinusoid current distribution. This current doesn't radiate much because the radiation field is mostly cancelled by the opposing turns, but it will be dissipated in the coil resistance. This represents the major loss in the antenna. If you replace it with a high Q coil, most of the current will be handed back from the reactance as the field collapses, contributing to the standing wave on the antenna which generates the radiation field.

Gary

--

Gary Coffman KE4ZV | "If 10% is good enough | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | for Jesus, it's good | uunet!rsiatl!ke4zv!gary
534 Shannon Way | enough for Uncle Sam." | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | -Ray Stevens |

Date: Sat, 9 Oct 1993 14:35:57 GMT

From: usc!howland.reston.ans.net!gatech!wa4mei!ke4zv!gary@network.ucsd.edu

Subject: idea for ground radials

To: info-hams@ucsd.edu

In article <9310081327.AA08076@wa2cjt.wellfleet> ginsburg@wellfleet.COM (Scott Ginsburg) writes:

>
>Has anyone tried the following idea for installing ground radials for an
>HF vertical: get some multi-conductor rotor cable, and make cuts that would
>result in each conductor being 1/4 wavelength on a single band. For example,
>if you wanted radials for 40, 30, 20, 15 and 10, start with a piece of
>5-conductor cable of length 34', and make 4 cuts stripping away the unneeded
>wire. The cable after being chopped up would look something like:

```
>
>----- 34'
>----- 23'
>----- 16'
>----- 11'
>----- 8'
>
>Is this a reasonable idea? Has anyone out there tried this?
```

This can work, but the individual elements interact strongly. You'll have to do a lot of pruning to get all the elements resonated for their individual bands. If you are burying the wire, this is all unnecessary. Just get as many radial wires as you can in the ground, and make them all as long as possible. For installations where raised radials are required, tuning them for each band can be worthwhile if you can't deploy a full ground screen of 200.

Gary

--
Gary Coffman KE4ZV | "If 10% is good enough | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | for Jesus, it's good | uunet!rsiatl!ke4zv!gary
534 Shannon Way | enough for Uncle Sam." | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | -Ray Stevens |

Date: Sat, 9 Oct 1993 16:29:15 GMT
From: swrinde!gatech!wa4mei!ke4zv!gary@network.ucsd.edu
Subject: MOTOROLA
To: info-hams@ucsd.edu

In article <johng-081093164343@sce16.comm.mot.com> johng@ecs.comm.mot.com (John Gilbert) writes:
>In article <9310071900.AA26243@ucsd.edu>, rrossi@vnet.IBM.COM (Ronald D. Rossi) wrote:
>> John asked that I repost this msg to the infohams. Please respond, if you wish
>> , to his packet address.
>> -----
>> >>From : N1NRA @ KD2AJ
>> >>Msgid : PN 2460@KD2AJ \$2460_KD2AJ
>> >>Subject : Posting for Internet < MOTOROLA >
>> >>
>> >> I find myself just a bit distressed by the amount of flack being
thrown ...
>> >> Is patent/copyright issue? If so, I bought the device and now own
>> >> its contents. I can delete or add "things" to my heart's content
>> >> as long as I stay within emission regulations, etc.

>
>So does this mean that you feel it is alright to modify those files on my
>IBM mainframe that tell the operating system that I have paid the yearly
>license fee?

>
>Or I wonder if the guy posting from DEC the other day would mind if I
>modify the login program on my Decstation to allow more than two
>simultanious users without paying DEC for the privilage? Once I make the
>modifications, I am sure DEC wouldn't mind if I post if to the Internet.

No, in both cases you signed an explicit licensing agreement with the software vendors prohibiting modification of the code they are renting to you. This would be like getting out the hole saws and mounting permanent antennas on a rental car.

>Nobody is going to write new Motorola radio software from scratch. There
>is no way that they would make enough money from it to recoup their
>Engineering investment. As for doing it as a home project --Find a team of
>100 software engineers who want to spend their personal time behind a work
>station for a year. I won't be volunteering for that assignment.

I sincerely doubt it's that hard, but even if it is, no one is talking about clean room clones. The issue is whether Motorola can prevent modifications to a legally purchased component of one of their radios. Since they do not require an explicit license agreement prior to purchase, and shrink wrap licenses have been declared null, they can't control the use to which their legally obtained codes are put. If they do start requiring such a license, I will strongly recommend that my company purchase radios from an alternate vendor.

>Motorola doesn't have a problem with business radio equipment being used in
>the ham bands or with hardware field modifications to the equipment. The
>problem is people hacking software to turn on features which Motorola paid
>to write, but that the customer hasn't paid to use. I have seen cases
>where the software interactions from having several features turned on that
>were never designed to be used together caused equipment or system
>problems. Not to mention that changing codeplug bits in a radio is a good
>way to wind up with a radio that will only power up and display the error
>"FAIL 01/82" (corrupt radio EEPROM).

Well here's an issue. Motorola is trying to avoid the expense of burning different ROMs for different radios by using a common set of codes with flag bits to activate various parts of the supplied codes. They can't copyright a changable flag. If the customer's changing of the flag causes the equipment to malfunction, it's solely the customer's problem, and not Motorola's concern. If Motorola thinks this may hurt their reputation, they can pay the cost to burn separate ROMs for different radio sets. Attempting

to intimidate their customers isn't buying Motorola any good will.

Gary

--
Gary Coffman KE4ZV | "If 10% is good enough | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | for Jesus, it's good | uunet!rsiatl!ke4zv!gary
534 Shannon Way | enough for Uncle Sam." | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | -Ray Stevens |

Date: Sat, 9 Oct 1993 15:28:19 GMT
From: swrinde!gatech!wa4mei!ke4zv!gary@network.ucsd.edu
Subject: Motorola ad in QST?
To: info-hams@ucsd.edu

In article <1993Oct8.164120.17669@lmpsbbbs.comm.mot.com>
burke_br@adcae1.comm.mot.com writes:
>In article 4636@anomaly.sbs.com, kd1hz@anomaly.sbs.com (Michael P. Deignan)
writes:
>}>In article <1993Oct7.161639.1483@lmpsbbbs.comm.mot.com>,
>}> burke_br@adcae1.comm.mot.com (Bruce Burke Sp App) writes:
>}
>}> That should have been more correctly explained as "taming with it to
>}> make a living/profit from it is a crime." Sorry, Bruce, WB4YUC, el YUCCO. . .
>}
>}> If I know that changing byte 3, bit 6, from a 0 to a 1 enables full-band
>}> receive on a Motorola radio, and a local public-works department hires
>}> me to modify their radios, I still fail to understand how this is a
>}> "crime".
>
>Because you have given the customer something he hasn't paid for and
>you are making a living from it.

Nonsense. The customer paid for the radio, and the customer paid to have it modified. The person doing the modification isn't violating Motorola's copyright any more than someone who autographs a book is violating the publisher's copyright. If Motorola doesn't want to sell a customer something, they don't have to include it in their radio. If you sell me a fan for cooling my shop, and it also can be modified to make mounds of cold slaw, you don't get to come back and charge me again for the fan. The modification is value added by me, or a third party.

>}>Sorry, but for all your claims of "Its a crime! Its a crime!", I've yet
>}>to see one solid, well reasoned explanation of why Motorola radios are
>}>viewed somehow "different" with regard to copyright laws than other

>}instruments, such as books. You have failed to provide any
>}evidence that any modifications I would make are "criminal", since
>}clearly, copyright laws indicate that I am free to make changes to
>}a copyrighted item for my own use. Furthermore, copyright law
>}does not prohibit me from making taking my modifications and
>}publishing them for other people to use, nor does copyright law
>}prevent me from taking other people's copies and making my
>}changes, if they want me to.
>
>Yes copyright laws do apply when it comes to altering computer code and
>then ytrying to make a living from it. And while we are at it -
>every time you sing Happy Birthday, technically you owe someone a royalty
>because that somg is copyrighted! As for books, go ahead and pull a chapter out
of
>one and try to republish it with your name on it and watch what happens!

No. Copyright applies if one were to make *copies* of the code, modified or not, and attempt to sell them, or even give them away. If you modify the *original* purchased copy, you are not in violation of copyright. As an example, I can buy a book, say the ARRL Operating Manual, which is copyright. I can then tear pages out of it in order to start a fire in my fireplace. That's not a violation of the ARRL copyright. Or I can insert additional pages in the book, remove pages from the book, or alter the contents of a page in the book. None of these actions, any of which may make the book more useful, are violations of the ARRL copyright. The same applies to computer code. Nothing in copyright law requires an end user to leave the code unmodified. The only thing copyright does is prohibit others from selling unauthorized *copies* of the code. That's where the "copy" in copyright comes from.

Musical copyright is somewhat of a special case since each *performance* of the music generates a new *copy* of the song, however transitory. The courts have ruled that this does *not* apply to computer code since in_memory copies are an integral part of the operation of the code. Otherwise, every time you load your text editor, you'd be violating the publisher's copyright.

Gary

--

Gary Coffman KE4ZV | "If 10% is good enough | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | for Jesus, it's good | uunet!rsiatl!ke4zv!gary
534 Shannon Way | enough for Uncle Sam." | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | -Ray Stevens |

Date: Sat, 9 Oct 1993 14:38:26 GMT
From: library.ucla.edu!europa.eng.gtefsd.com!gatech!wa4mei!ke4zv!

gary@network.ucsd.edu
Subject: MultiBand Wire Antenna
To: info-hams@ucsd.edu

In article <931008115207_3@ccm.hf.intel.com> Cecil_A_Moore@ccm.hf.INTel.COM (Cecil A Moore) writes:
>>I use an AEA HF analyst to view the SWR graph across frequency ranges.
>> -David. KE6BWJ
>
>David, please use your AEA HF analyst to view the SWR graph across
>frequency ranges with a very short piece of transmission line AT THE
>FEED-POINT OF THE ANTENNA. And would you please publish the results
>here?

Note that taking measurements with the instruments in the near field can yield misleading results. Your friends the Smith Chart and the coax loss tables can give you accurate results with any random length of feedline.

Gary

--
Gary Coffman KE4ZV | "If 10% is good enough | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | for Jesus, it's good | uunet!rsiatl!ke4zv!gary
534 Shannon Way | enough for Uncle Sam." | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | -Ray Stevens |

Date: Sun, 10 Oct 93 15:00:36 GMT
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!wupost!csus.edu!netcom.com!
netcomsv!bongo!skyld!jangus@network.ucsd.edu
Subject: New Products Announcement: BFH-1 & BFH-2
To: info-hams@ucsd.edu

In article <2532@indep1.UUCP> clifto@indep1.UUCP writes:

> : > in the eye and say "BFH means 'big hammer'." They stare blankly for
> : And if they need instruction on how to use that BFH, they can RTFM.
> I react to that one the same way... "Read The Manual" and grin. The
> Too bad there's no way to apply that to FUBAR...

Back when these things first got publicity nobody would say them correctly in print or over the air. So... When some higher management type said to the press, "Well, it appears to be FUBAR as they say." the reporter did

his best to explain it meant; Fouled Up Beyond All Repair. An extention of FU for Fouled Up, and JANFU for Joint Army Navy Foul Up.

Language is funny, it used to be that our friend the "F-word" used to be the exclusive providence of "real men" and as such just wasn't spoken in front of the women or the general public. But when some term such as FUBAR was used, all the guys would stand around and do the "Know what I mean? Nudge nudge wink wink. Say no more!" routine.

Or as Archie Bunker once said, "Look here Meathead, when I was your age, you had to be in the Army to get free shots for that."

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NA | "It is difficult to imagine our
Internet: jangus@skyld.tele.com | universe run by a single omni-
US Mail: PO Box 4425 Carson, CA 90749 | potent god. I see it more as a
Phone: 1 (310) 324-6080 | badly run corporation."

Date: Sun, 10 Oct 93 06:20:21 GMT
From: usc!wupost!csus.edu!netcom.com!netcomsv!bongo!skyld!jangus@network.ucsd.edu
Subject: Temporary IDs
To: info-hams@ucsd.edu

In article <29494rINN1rh@emx.cc.utexas.edu> oo7@emx.cc.utexas.edu writes:

> I am not condoning this, but one might say that it is preferable to have
> a novice operating properly on 14155 than it is to have an Extra class
> operator acting like a lid in the Novice bands. Not that either represents
> the Finest in Ham Radio[tm].

I remember having some pin-head challange my right to transmit on a repeater since I have 2X3 (obviously novice) callsign. After seriously dressing him down on the repeater (and risking my license in the process) I received a standing ovation from several other ops that had had run-ins with this fool in the past.

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NA | "It is difficult to imagine our
Internet: jangus@skyld.tele.com | universe run by a single omni-
US Mail: PO Box 4425 Carson, CA 90749 | potent god. I see it more as a
Phone: 1 (310) 324-6080 | badly run corporation."

Date: 10 Oct 1993 15:02:38 -0500

From: swrinde!cs.utexas.edu!geraldo.cc.utexas.edu!emx.cc.utexas.edu!not-for-mail@network.ucsd.edu
Subject: Temporary IDs
To: info-hams@ucsd.edu

jangus@skyld.tele.com (Jeffrey D. Angus) says:

>>I remember having some pin-head challange my right to transmit on a
>>repeater since I have 2X3 (obviously novice) callsign.

Right. Remember that net.person Trey WN4KKN has won several national and international contests, and you can bet that he didn't do that by staying in the Novice bands, wehre he "obviously" belongs.

Derek "not a novice either" Wills (AA5BT, G3NMX)
Department of Astronomy, University of Texas,
Austin TX 78712. (512-471-1392)
oo7@astro.as.utexas.edu

Date: Sun, 10 Oct 1993 13:05:59 GMT
From: sytex!rjkeller@uunet.uu.net
Subject: Turning in RFI generating PC's to FCC
To: info-hams@ucsd.edu

> Will any of this do any good? Perhaps, perhaps not. But if we just
> continue to ignore the problem it certainly won't get any better.

You are correct that the problem can't get any better if you don't do something, and thus, you can certainly not make matters any worse by following up as you have. Moreover, FWIW, the FCC has in recent years gotten quite aggressive about issuing fines (or what they call "monetary forfeitures") for fall sorts of violations, including failure to observe Part 15 requirements in the marketing of electronic equipment. If it turns out that the model you have is in fact noncompliant, then I would not be surprised to see the information you provided to the FCC result in a forfeiture of at least \$6,000 to the vendor. Theoretically it could be more because each day of a violation counts separately, but the FCC typically starts with the base amount, especially if it is the first offense to come to their attention. If the vendor has aany interest in complying with law (or at least a desire to stay out of trouble) that initial fine is usually adequate to get its attention and make sure it cleans up its act.

Good luck.

-- Bob

Robert J. Keller (KY3R) | rjkeller@sytex.com
Telecommunications Lawyer | rjk@telcomlaw.win.net
Tel 202.939.7918 Fax 202.745.0916 | CIS 76100.3333

Date: Sun, 10 Oct 1993 16:41:56 GMT
From: library.ucla.edu!agate!spool.mu.edu!bloom-beacon.mit.edu!world!
carlisle@network.ucsd.edu
Subject: Turning in RFI generating PC's to FCC
To: info-hams@ucsd.edu

Your activety will indeed have an effect on the company that makes the product. The FCC has been very good in using it's limited resources for maximum effect.

The most important change will be in the handling of future applications for certification for that company by the FCC. Rather than just accepting their data they will ask for actual samples and test them themselves. This process will go on until the FCC is convinced that the company is trustworthy, which in some cases has taken years.

The FCC will also keep a close lookout for the company at trade shows like Comdex. Their field office personnel are well trained in enforcement.

The company will almost certainly draw a fine. If its their first violation, it will be between 5,000 and 10,000 dollars. It could range up to 75,000.

Finally, under recent legislation, customs must check imported products for FCC approvals. They may be watching this company a little closer now.

All of this, taken together, has an inevitable affect on the company. They usually start making the FCC rules a priority, unless they are truly a fly by night.

Date: Sun, 10 Oct 93 14:23:50 GMT
From: mnemosyne.cs.du.edu!nyx!jmaynard@uunet.uu.net
To: info-hams@ucsd.edu

References <9310071900.AA26243@ucsd.edu>, <johng-081093164343@sce16.comm.mot.com>, <1993Oct9.162915.7570@ke4zv.atl.ga.us>~3

Subject : Re: MOTOROLA

In article <1993Oct9.162915.7570@ke4zv.atl.ga.us> gary@ke4zv.UUCP (Gary Coffman) writes:

>If Motorola thinks this may hurt their reputation, they can pay the
>cost to burn separate ROMs for different radio sets. Attempting
>to intimidate their customers isn't buying Motorola any good
>will.

Actually, they may be moving in this direction, but in a slightly different manner: the MTS2000 series, at least, has the firmware in EEPROM. I don't know if the current programming software does this, but that makes possible downloading only the code that implements the features the user has paid for into the radio. Turning on additional features would then require downloading whole modules into the radio, and someone doing that without permission would indeed be in violation of copyright.

I do agree that the methods used in older radios, where turning on a flag bit enables a feature with code already present in ROM, is beyond Motorola's control once the radio is out of their hands; further, a Motorola service shop which turned off those features would find itself in hot water in a hurry.

--
Jay Maynard, EMT-P, K5ZC, PP-ASEL | Never ascribe to malice that which can
jmaynard@oac.hsc.uth.tmc.edu | adequately be explained by stupidity.
"I wonder if the engineering subsidiaries of IBM Legal Corporation and
Microsoft Lawsuits, Inc. will leave us anything to play with?" -- Larry Shurr

End of Info-Hams Digest V93 #1204
